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10/788,619	02/27/2004	Markus Goldstein	P04,0039	6493

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EXAMINER	
YEH, EUENG NAN	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/788,619	GOLDSTEIN ET AL.	
	Examiner	Art Unit	
	Eueng-nan Yeh	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 February 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *Aug 25, 2004; Jul 1, 2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The figure 3 is objected to as failing to comply with 37 CFR 1.84(p)(5) because it does not correctly include the reference "K=2, Q=1, A=1" mentioned in the description page 12. Instead, right column of figure 3 states "K=2, A=1, **Q=2**".

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities and appropriate corrections are required:

- Page 9, last line, "however the user 16 is". The correct statement is "however the user ~~16~~ **11b** is".
- Page 10, line 4, "(ROIs) 18 through 30". Correction: "(ROIs) ~~18~~ **28** through 30"
- Page 12, line 13, "progress bars 57, 58, 62 and 67. Correction: "progress bars 57, 58, ~~62~~ **63** and ~~67~~ **68**".
- Page 12, line 15, "progress bars 56, 61 and 66". Correction: "progress bars 56, ~~61~~ **62** and ~~66~~ **67**".
- Page 13, line 7, "for the user 1". Correction: "for the user ~~1~~ **11b**".

Claim Objections

4. The following quotations of 37 CFR 1.75(a) and (d)(1) are the basis of objection:

> (a) The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.
>
> (d) (1) The claim or claims must conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description.

5. Claims 2, 12, 13, 14, and 15 are objected to under 37 CFR 1.75(a), as failing to particularly point out and distinctly claim the subject matter which application regards as his invention or discovery:

- Regarding claim 2, line 5, "a slice thickness, and a a" the last a needs to be removed from above statement as "a slice thickness, and a ~~a~~".
- Regarding claims 12, 13, 14, and 15, line 1 for each above-mentioned claims, "A method as claimed in claim 10". The "claim 10" appears to be a typographical error. In light of the corresponding written description of the invention, and for purpose of this examination, the following assumption will be used "A method as claimed in claim ~~10~~ **11**".

6. Claims 3 to 10 are objected to under 37 CFR 1.75(d)(1), as failing to conform to the invention as set forth in the remainder of the specification.

- Regarding claim 3 states that the decompression device generates *SOMETHING* and transmits *SOMETHING* to further workstation with the decompressed packetized image. There is no clear support or antecedent basis for above concept in the description. According the description page 17, line 4, "during the data transmission, the server communicating to the client additional information and requests", it is the server (i.e. the compressor not the decompressor) transmits *SOMETHING* to the client. Also, page 14, line 11 "the image data are first stored compressed form and then are transmitted compressed" this makes the claim "with the decompressed packetized image" questionable. Applicant may either point out where or how the original specification describes this

limitation, or amend the specification to describe this feature without adding new matter.

- Regarding claim 10, it has the same above-mentioned question.
- Regarding claims 4 to 9, will the "compression device" make more sense than the stated "decompression device"?

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Gropper et al. (US 2003/0005464 A1), Sirohey et al. (US 2002/0057844 A1), Onno et al. (US 2003/0018750 A1), and Koppich et al. (US 2003/0200234 A1).

Regarding claims 1, Gropper discloses a medical system comprising:

at least one imaging modality for acquiring image data representing examination images (as depicted in figure 1A, numeral 120: "...The image source 102, also referred to as a modality, is a device that captures an image and/or image related data. For example, the image source 102 can be a computed tomography ("CT") imager, a magnetic resonance ("MR") imager, an ultrasound ("US") imager, an X-ray imager ..." in paragraph 33, line 11);

for each imaging modality, a computer workstation associated therewith for processing the image data acquired by the associated imaging modality (as depicted in figure 1A, importer module 104 is a part of workstation which receives source image #102: "In some embodiments, the importer 104 converts the image file from the received format (e.g., DICOM and the like) to a different format (e.g., XML, JPEG2000 and the like ..." in paragraph 37, line 1. See also figure 3, importer module 303, paragraphs 71 and 72);

a communication network in communication with said computer workstation for transferring said examination images, after processing in the computer workstation, to locations remote from said computer workstation (as depicted in figure 1A, numeral 122 is the communication network which connects between #104 and repository #108);

a storage device in communication with said communication network for storing said examination images (as depicted in figure 1A, numeral 108);

at least one further workstation in communication with said communication network for post-processing the examination images processed in said computer workstation (as depicted in figure 1A, numeral 116 is another workstation: "The client device 116 is a computing device that can communicate with the network 114. The client device 116 can be for example, a personal computer, a general workstation, a radiology workstation ..." in paragraph 53, line 3);

a compression device in communication with said computer network for compressing and organizing the image data representing said examination images and for storing the compressed data in packets, as packetized image data (as depicted in figure 3, numeral 306: "...image coding processor 306 transforms the medical images using the JPEG

2000 protocol. JPEG 2000 follows a similar progression to any transform technique for image compression" in paragraph 72, line 6. Some of the salient features offered by the JPEG2000 standard are: continuous tone (grayscale and color) and bi-level image compression; progressive transmission by pixel accuracy and resolution; region of interest coding. A color image may have several components (multi-component) from a specified color space. For JPEG2000, all the compressed bitstreams (i.e. coded data) from a specific tile, layer, resolution, component, and precinct are stored in a contiguous segment called a packet);

a decompression device in communication with said communication network for decompressing the packetized image data packet-by-packet dependent on a request from said further workstation, for causing multi-component images to be generated at said further workstation with progressive parameters (as depicted in figure 1A , numerals 116 and 117, "The client device 116 communicates over the network 114 to request a desired image file ..." in paragraph 53, line 13. See also figure 1B, numerals 116 and 117. "The repository 108 transmits the requested image file or manifest to the client device 116 for display using the image viewer 117. If an image is retrieved, the image viewer 117 displays the image ..." in paragraph 54, line 5. Thus, the decompression device #116 requests JPEG2000 data file through network and the viewer #117 displays the result).

Gropper discloses multi-component JPEG2000 data storage and retrieve system. Gropper does not disclose to retrieve data with parameters such as region of interest or

quality and resolution. Furthermore, Gropper does not explicitly disclose a way to define the accessibility for each JPEG2000 packet.

Sirohey, in the same field of endeavor of data management ("rapid transmission of image files and selective handling based on the desired region of interest" in paragraph 11, line 2), discloses in his figure 27, numeral 776 for the user to submit a request for higher resolution image data for area of interest (AOI). These image resolution and AOI are parameters link to JPEG2000 data packets.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to provide the data distribution system Gropper made with the option to choose not just the entire file for an image but a quantity of data defined by desired parameters as taught by Sirohey, such that only the desired portion of image transmitted and viewed to improve the working efficiency "Accordingly, a desired region of the image data can be identified and individually handled for storage, transmission, retrieval, and display" in Sirohey paragraph 12, line 7.

Onno, in the same field of endeavor of image processing to obtain "a set of parameters representing original data" in paragraph 1, line 4, discloses that the user can not only define the area of interest but also "request the resolution ... of the chosen sub-image" in paragraph 197, line 1, and "the user may furthermore specify the desired quality in his request" in paragraph 200, line 1. Once the requested sub-image completed, it will be displayed in figure 12 with the quality bar or quantity bar discussed in paragraphs 318-320. "the user will be supplied with at least one value indicative of a quantity of information data which has been determined during the step S5 *(figure 5)*" in

Onno paragraph 312, line 3. In the mean time, "the system can supply the user with the value indicative of the quantity of information data corresponding to the lowest quality layer on the table of FIG. 9 mentioned above, which will enable him to take a decision with respect to the request initially formulated, and possibility to refine it" in Onno paragraph 313, line 1.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to provide the data distribution system of Gropper and Sirohey combination with quality and resolution options as taught by Onno, so the user "will be able to obtain information about the resolutions or levels of quality available in the selected sub-image" in Onno paragraph 372, line 1, and also "respond rapidly to a request for obtaining a sub-image selected by the user by providing a response to the user" in Onno paragraph 374, line 2.

The combination of Gropper, Sirohey, and Onno above does not explicitly disclose a way to define the accessibility for each packet.

Koppich, in the same field of endeavor of data management ("a rule-based automation system for a document management system" in paragraph 1, line 2), teaches "User rights to the folder are suitably assigned by an Administrator in accordance with the level of access provided to that particular user. For example, the user may be granted full access to his or her documents in private folders, yet restricted to a lesser read-only access to documents in the group folder" in paragraph 59, line 7. Without departing from the scope and spirit of Koppich's methodology, the level of

accessibility for each JEPG2000 packet should be properly defined to ensure the data security.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to provide the data distribution system of Gropper, Sirohey, and Onno combination with the accessibility restriction for JPEG2000 packets as taught by Koppich, such that proper level of data can be check-out to "[T]the user is suitably granted access in accordance with the rights assigned by an Administrator and associated with the login information provided by the user" in Koppich paragraph 61, line 4.

Regarding claim 2, compression device generates parameters, as said parameters respectively linked with said packets, selected from the group consisting of a parameter specifying an image resolution level, a parameter specifying an image quality level, a parameter specifying a region of interest, a parameter specifying a slice thickness, and a parameter specifying a component index (as discussed in claim 1 for the compression device that the packet of JPEG2000 contains parameters such as region of interest, progressive accuracy level, and progressive resolution level etc.); decompression device employs said parameters to generate said multi-component images with at least one of a progressive image resolution, progressive image quality levels, consistent region of interest presentation, and variable slice thickness, respectively (as discussed in claim 1 for the decompression device that the permissible access to the respective JPEG2000 packet linking to parameters such as progressive

quality level, progressive resolution level, and region of interest has been defined and verified before a multi-component image data can be transmitted to the user. Only permissible packets can be check-out and then displayed by the viewer).

Regarding claim 3, decompression device generates supplementary information and requests and transmits said supplementary information and requests to said further workstation together with the decompressed packetized image data (discussed in claim 1 the user will be supplied with data quantity information).

Regarding claim 4, decompression device transmits a total quantity of data in compressed state, with said parameters, to said further workstation (discussed in claim 1 for data with desired parameters. Further reference to Onno figures 9 and 10, "user receiving the quality table of FIG. 9 or else this table directly in the form of a scale of values 200 can then display it in the form which is shown by way of example in FIG. 10", in Onno paragraph 318, line 1, where the 100% is the total amount of data. See also Onno paragraphs 319-321).

Regarding claim 5, wherein said decompression device transmits an entire file for an image in compressed state to said further workstation (discussed in claim 1 for the whole file transmission).

Regarding claim 6, decompression device transmits information identifying packets that have already been sent and parameters that have already been transmitted in advance to said further workstation (as depicted in Sirohey figure 27, "process 400 also uses a variety of flags and identifiers to facilitate tracking of the addressable sub-band data ... these flags and identifiers may include flags to indicate whether the process 400 has already retrieved and incorporated specific tessellated blocks, i.e., Sub-Bands(Z, X, Y), or has already retrieved an entire resolution level into the locally stored image data" in paragraph 122, line 1).

Regarding claims 7 and 8, as depicted in Onno figure 12 after the selected image #220 completed and visualized, the quality bar rendering a request for the user to make a "selection by the mechanism 210 of a quantity of data chosen by the user will automatically generate a request addressed to the server ..." in Onno paragraph 323, line 1.

Regarding claim 9, said decompression device generates and transmits a storage recommendation as said message (once user finish about the displayed image or document, several storage saving options discussed by Koppich paragraphs 54 and 56).

Regarding claim 10, further workstation has user rights associated therewith (as depicted in Gropper figure 1A, numeral 110 "The authorized user 110 is a user who is

authorized to have access to the received image ... The authorization process can be any accepted authorization, for example, passwords, biometric authentication ..." in paragraph 36, line 9, and

wherein said decompression device transmits the decompressed packetized image data, or portions thereof, to said further workstation dependent on said user rights (discussed in claim 1 for the accessibility).

Regarding claim 11, a method for operating a medical system architecture comprising the steps of:

generating raw data of medical multi-component images using said imaging modality, as said image data (discussed in claim 1 for the imaging modality);

compressing said raw data to generate compressed image data (discussed in claim 1 for the compression device);

organizing and storing said compressed image data in packets and linking respective parameters to the packets designating accessibility to the respective packets (discussed in claim 1, storage device and compression device. See also the claim 1 discussion about parameters and packet accessibility);

transferring the compressed image data to a decompression location (as depicted in Gropper figure 1A, "user 110 wants to retrieve the image file, or manifest, the authorized user 110 uses the client device 116. The client device 116 is a computing device that can communicate with the network 114 ... The client device 116 communicates over the

network 114 to request a desired image file or patient study" in Gropper paragraph 53, line 1. See also the claim 1 discussion about the selected parameters); and

at said decompression location, decompressing the compressed image data to form multi-component images with progressive reproduction dependent on said parameters (discussed in claim 1 for the decompression device with parameters).

Regarding claim 12, entering requests into said further workstation about specific parameters associated with said image data in said packets (discussed in claim 1 about specific parameters such as region of interest, resolution level, and quality level for each packet).

Regarding claim 13, further workstation has user rights associated therewith, and comprising analyzing said parameters to determine whether said decompressed image data can be presented at said further workstation dependent on said user rights (discussed in claim 1 about the accessibility).

Regarding claim 14, additionally transmitting supplementary information and requests from said decompression location to said further workstation (discussed in claim 1 the user will be supplied with data quantity information).

Regarding claim 15, selecting said parameters from the group consisting of a parameter defining progressive image resolution, a parameter defining progressive

image quality levels, a parameter identifying region of interest consistency, and a parameter designating a variable slice thickness (discussed in claim 1, the parameter can be region of interest, image quality level, or resolution level).

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eueng-nan Yeh whose telephone number is 571-270-1586. The examiner can normally be reached on Monday-Friday 8AM-4:30PM EDT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian P. Werner can be reached on 571-272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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